

REMARKS

Applicants have amended the specification to correct several formal errors. The amendments to the specification do not constitute new matter. Applicants have also canceled claims 1-21 without prejudice and added new claims 22-40. Applicants submit the new claims are in condition for allowance and a notice to that effect is earnestly solicited.

VERSION OF CLAIMS WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

At page 3, line 14, delete "and" and substitute therefor --of--.

At page 8, line 19, before the second occurrence of "output", insert --the--.

At page 10, line 7, delete "50" and substitute therefor --52--; and at line 9, delete "50" and substitute therefor --52--.

At page 12, line 11, after "core", insert --52c--; and at line 14, delete "412, 414" and substitute therefor --410, 412--.

IN THE CLAIMS:

Cancel claims 1-21 without prejudice.

Add the following new claims:

22. An output choke for a D.C. arc welder having an inductance comprising a high permeability core having first and second pole pieces and an inductance controlling air gap, said first and second pole pieces each having an end surface, said air gap defined between said end surfaces of said first and second pole pieces, each end surface including two outer edges and an intermediate area positioned there between, each of said intermediate areas being substantially V-shaped, said outer edges of said end surfaces of said first and second pole pieces being connected together and a diamond shaped air gap is formed by said two intermediate areas, said air gap having a configuration which results in said inductance of said choke gradually changing with an output current of the welder without saturation in said air gap thereby eliminating inflection points during operation of said welder.

23. The output choke as defined in claim 22, wherein said diamond shaped air gap is substantially symmetrical.

24. The output choke as defined in claim 22, wherein said diamond shaped air gap is non-symmetrical.

25. The output choke as defined in claim 22, wherein said intermediate areas of said end surfaces of said first and second pole pieces having substantially the same shape.

26. The output choke as defined in claim 22, wherein said intermediate areas of said end surfaces of said first and second pole pieces having a different shape.

27. The output choke as defined in claim 22, wherein said air gap is filled with a low permeability material.

28. The output choke as defined in claim 22, wherein said choke includes a winding for conducting welding current, said winding and said core has a sufficient size to prevent saturation at a weld current of at least about 100 amperes.

29. An output choke for a D.C. arc welder having an inductance comprising a high permeability core having first and second pole pieces, an inductance controlling air gap, and a winding for conducting welding current, said first and second pole pieces each having an end

surface, said air gap defined between said end surfaces of said first and second pole pieces, each end
5 surfaces including two outer edges and an intermediate area positioned there between, at least one
of said intermediate areas being substantially V-shaped, said air gap having a configuration which
results in said inductance of said choke gradually changing with an output current of the welder
without saturation in said air gap thereby eliminating inflection points during operation of said
welder, said winding and said core having a size to prevent saturation at a weld current of at least
10 about 100 amperes.

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30. The output choke as defined in claim 29, wherein both intermediate areas being
substantially V-shaped.

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31. The output choke as defined in claim 29, wherein said diamond shaped air gap is
substantially symmetrical.

32. The output choke as defined in claim 29, wherein said diamond shaped air gap is non-
symmetrical.

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33. The output choke as defined in claim 29, wherein said intermediate areas of said end
surfaces of said first and second pole pieces having substantially the same shape.

34. The output choke as defined in claim 29, wherein said intermediate areas of said end
surfaces of said first and second pole pieces having a different shape.

35. The output choke as defined in claim 29, wherein said outer edges of said end surfaces of said first and second pole pieces being connected together.

36. The output choke as defined in claim 29, wherein said air gap is filled with a low permeability material.

37. The output choke as defined in claim 29, wherein said air gap has a configuration that causes said inductance of said choke to gradually vary over a current range in an inverse relationship with a weld current.

38. The output choke as defined in claim 29, wherein said end surfaces are spaced from one another.

39. The output choke as defined in claim 29, wherein said air gap between said end surfaces is substantially diamond shaped.

Respectfully submitted,

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